

CLAIMS

1. An R-Fe-B based thin film magnet characterized by comprising an R-Fe-B based alloy which contains 28 to 45 percent by mass of R element (where R represents at least one type of rare-earth lanthanide elements) and which is physically formed into a film, wherein the R-Fe-B based alloy has a composite texture comprising $R_2Fe_{14}B$ crystals having a crystal grain diameter of 0.5 to 30 μm and R-element-rich grain boundary phases present at boundaries between the crystals.
2. The R-Fe-B based thin film magnet according to Claim 1, characterized in that c axes, which are easy-to-magnetize axes, of $R_2Fe_{14}B$ crystals are oriented randomly or oriented nearly perpendicularly to a film surface.
3. The R-Fe-B based thin film magnet according to Claim 1 or Claim 2, wherein the film thickness is 0.2 to 400 μm .
4. A method for preparation of the R-Fe-B based thin film magnet according to any one of Claims 1 to 3, the method characterized by comprising the step of heating the R-Fe-B based alloy to 700°C to 1,200°C during physical film formation or/and the following heat treatment, so as to grow crystal grains and form R-element-rich grain boundary phases.